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Chronic CAD/Stable Ischemic Heart Disease

CLINICAL AND ANGIOGRAPHIC RESULTS AFTER ROBOTIC-ASSISTED CORONARY ARTERY BYPASS SURGERY: LESSONS LEARNED FROM OUR FIRST 201 CASES

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Monday, March 26, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Fresh CABG: Good for SIHD?
Abstract Category: 3. Chronic CAD/Stable Ischemic Heart Disease: Therapy
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Background: The purpose of this study was to report our initial clinical and angiographic results with robotic-assisted coronary artery bypass surgery (CABG) for either isolated left anterior descending coronary (LAD) stenosis or as part of a hybrid coronary revascularization strategy for multivessel disease.

Methods: From 10/09-11/11, 201 consecutive robotic-assisted minimally-invasive CABG procedures were performed at a single institution by 2 surgeons. Isolated, off-pump, left internal mammary artery (LIMA) to LAD grafting was performed via a 3-4 cm sternal-sparing thoracotomy after robotic LIMA harvest and pericardiotomy.

Results: Hybrid coronary revascularization was performed in 98/201 (48.8%) patients with 12 (12.2%) cases performed as one-stop procedures in a hybrid suite. Thirty-day mortality occurred in 2 (1.0%) patients, myocardial infarction in 5 (2.5%), and there were no postoperative strokes. Conversion to sternotomy occurred in 13/201 (6.5%) cases. Among the 201 patients, 146 (72.6%) patients underwent angiographic assessment of the LIMA graft; 46 (31.5%) of these had intraoperative completion angiography in a hybrid suite. Grafts were confirmed to be patent in 141/146 (96.6%) patients. Three occluded grafts had flow restored with percutaneous (2) or surgical intervention (1). Five patent grafts (5/141, 3.5%) required PCI for stenosis in the LIMA or at the anastomosis. Inadvertent diagonal grafting occurred in 3 patients. Intraoperative completion angiography revealed defects in 5/46 (10.9%) grafts: graft kink (1), diagonal grafting (1), and poor distal flow (1), leading to surgical revision of these 3 grafts; and coronary spasm (2), treated medically.

Conclusions: Robotic-assisted CABG is safe and effective. It may represent an alternative to traditional CABG and can be performed for isolated LAD disease or as part of a hybrid revascularization approach for patients with multivessel disease. This approach may provide the durability of LIMA-LAD grafting without the morbidity of traditional CABG. Intraoperative completion angiography in a hybrid suite provides immediate confirmation of graft patency and allows for graft revision when defects are identified.